California Air Resources Board

Outboard Marine Tank Public Workshop

Sacramento, California

April 24, 2007

Agenda

- Introductions
- Background
- Overview of Proposed Regulation
- Standards and Implementation
- Certification Process
- Tank Testing Requirements
- Fuel Hose Assembly Testing Requirements
- Rulemaking Schedule
- Closing Comments

Background

- November 2005: ARB began study of portable OMTs in California
- April 2006-January 2007:
  - ARB created new OMT web site;
  - Discussed test strategies with US EPA; and,
  - Began quantifying emissions & investigating control measures
- January 2007: ARB hosted a Public Workshop to share test data and discuss potential control strategies
- Present: ARB in close contact with stakeholders and the US EPA while developing a regulatory proposal

Background

- Estimates show over 200,000 tanks in California
- Visits to marina's and waterways revealed problems with consumer assembled fuel line parts and fittings
- Many tanks not using fittings or fill caps
- Test data shows some tanks have problems with liquid leaks and spillage
- Current technology uses no controls for permeation, evaporation, or spillage

Overview of Proposed Regulation

- Regulation is for new tanks and fuel hose assemblies sold in California after December 1, 2008
- Two-component approach: the fuel tank and the fuel hose assembly
- Regulation requires all components be certified by ARB prior to selling in California
- Regulation will phase-in to provide time for larger sized tanks and a new fitting standard

Standards and Implementation

Emission Standards

- Fuel Tanks – Phased-in standard
  - Diurnal standard ≤ 0.20 grams/gallon-day
  - 12-gallon and less by December 1, 2008
  - Up to 30-gallons by June 1, 2009
- Fuel Hose Assembly
  - Permeation standard ≤ 15 grams/m^2/day
  - Includes fuel hose, primer bulb, and fittings
  - Assemblies only by December 1, 2008

Standards and Implementation

Hose Assemblies Only

Entire Assembly

Allowable

Individual Components

Not Allowable

Standards and Implementation

Fitting Requirements

- Fuel Tanks
  - Standard fitting required by June 1, 2009
  - Fitting to mate with fuel hose assembly
  - Fitting developed by industry with assistance or guidance of ARB
- Fuel Hose Assembly – Phased-in Standard
  - Hose assemblies required by December 1, 2008
  - Standard fitting required by June 1, 2009
  - Fitting to mate with fuel tank

Certification Process

- Certification required for all new tanks and fuel hose assemblies sold after December 1, 2008
- Manufacturer has components tested by an independent test lab and then submits an application to ARB per the requirements listed in CP-510
- ARB reviews application and test data
- ARB issues an Executive Order and lists certified components on web site
- Certification is not an exemption from compliance

Certification Process

- Primary requirements for certification:
  - A completed application per CP-510
  - Passing test results
  - Drawings and examples of products
  - Operating & Maintenance Instructions
  - Warranty
- Timeframes:
  - Up to 6 months for testing (manufacturer)
  - 30 to 90 days until final Executive Order (ARB)

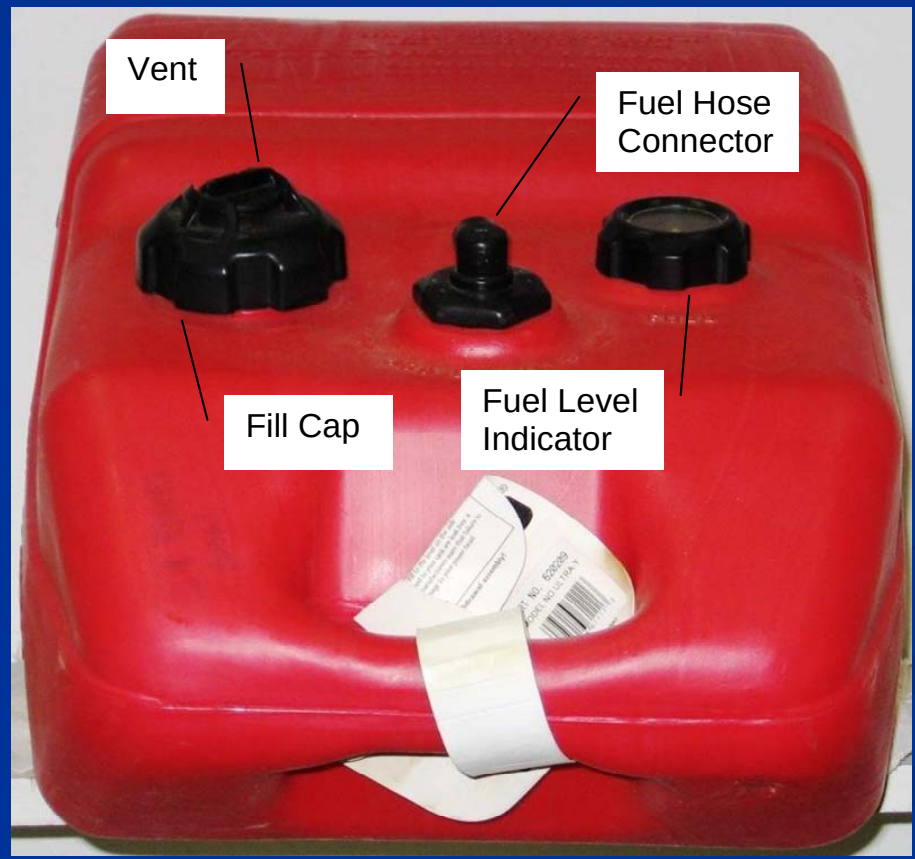
Tank Testing Requirements

- Test Procedure TP-511
- Diurnal testing required
- Checks the barriers, seals, and vents

Tank Testing Requirements

Tank Tested as an Entire Unit

(as sold - fuel hose assembly not included)



Tank Testing Requirements

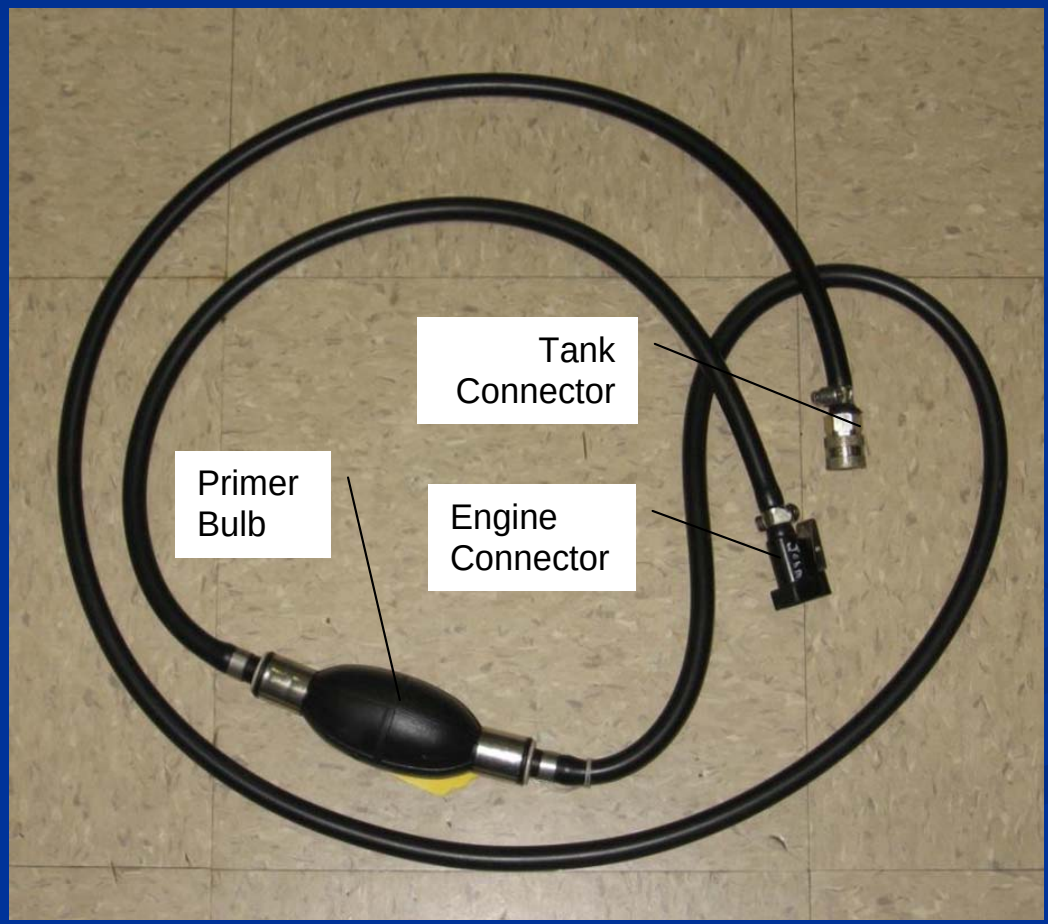
- Testing resembles field conditions
- Preconditioning Period:
  - 140 days at ambient conditions, or
  - 70 days at constant temperature, with
    - 1,000 pressure cycles (-0.5 to 2.0 psig) in 8 hours, and
    - Constant weight loss determination (last 10 days)
- Diurnal Testing:
  - 65°F – 105°F – 65°F in 24 hours
    - With specific hourly temperatures
  - 3 diurnal cycles required
- Emission rate determined from weight loss

Fuel Hose Assembly Testing Requirements

- Test Procedure TP-512
- Permeation test required
  - Steady-state temperature
- Also checks barriers and seals

Fuel Hose Assembly Testing Requirements

Assembly Tested As Entire Unit
(as sold – OMT not included)



Fuel Hose Assembly Testing Requirements

Test Procedures

- Determine assembly interior area
  - Hoses & primer bulbs only
- Fill assembly with test fuel and weigh
  - Store at stable temperature (69.5F – 76.5F)
  - At 24 hours, reweigh assembly & record difference
  - Refill and repeat 15 times
- Permeation rate determined from weight loss

Rulemaking Schedule

- Now until July 2007:
  - Incorporate comments & input
  - Finalize Certification and Test Procedures
  - Finalize Emissions Inventory
- Next Workshop tentative for July 2007
  - Present final Certification and Test Procedures
  - Present final Emissions Inventory
  - Request for additional comments
- Continue monitoring US EPA proposal
- Continue working with manufacturers to develop a new fitting standard
- Board Hearing November 2007

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